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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,650	12/22/2000	George D. Whiteside	8481/PMC	4767
20349	7590	05/09/2005	EXAMINER	
POLAROID CORPORATION PATENT DEPARTMENT 1265 MAIN STREET WALTHAM, MA 02451			PHAM, HAI CHI	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,650

Applicant(s)

WHITESIDE ET AL.

Examiner

Hai C. Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means," "said" and "comprise," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the Abstract contains terms that should be avoided, e.g. "comprised" (line 3), "comprising" (line 14) and "means" (lines 15 and 16). Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1:

- “said printer” at line 16 clearly lacks antecedent basis.

Claims 2-8 are dependent from claim 1 above, and are therefore indefinite.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirochi (U.S. 5,689,283) in view of Cooper (U.S. 5,949,087).

Shirochi discloses a method of imaging a digital display onto an image plane, wherein the resolution of an image on the image display system is increased by shifting vertically a lens (31) out of the optical axis (Fig. 11), the system including a digital display (LCD panel 10), a lens (31), and an image plane (as defined by the location of the viewer 1 or screen in the case of the display system), which are arranged in that order along the direction of the optical axis (Fig. 5), wherein the lens (31) is transposed vertically out of the original optical axis for exposing the screen with a second data, which is shifted by a distance equal to the width of one pixel image (or half of the pixel pitch P_v) (col. 5, lines 14-29) (Figs. 1A-1C) and wherein the digital display is illuminated again with the same digital image data set for the same fixed period of time. Shirochi further teaches that the apparent number of pixels can be optically increased horizontally as well as vertically

such that the lens is repeatedly transposed for forming at least four pixels (col. 19, lines 58-62).

However, Shirochi fails to teach the provision of a plurality of lenses and the photosensitive medium defining the image plane.

Cooper discloses an apparatus and method for position and/or resolution enhancing of an image, the apparatus can be either a projection display system or a printer (col. 1, lines 13-20 and col. 10, line 62 to col. 11, line 38), provided with a digital display (film 3, which can be replaced with a LCD) (col. 4, lines 16-18), a plurality of optical elements (projection lens 6 and correction optics 9) and an image plane defined by a photosensitive medium (in the case of a printer, not shown) spaced along an optical axis extending from said digital display through the optics to the photosensitive medium, wherein one of the plural optical elements includes a transposable optics (movable lens element 9) to cause the image to shift by a pixel width to enhance the resolution of the image (col. 4, lines 30-40 and col. 10, lines 27-44).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a plurality of lens along with the transposable lens in the device of Shirochi as taught by Cooper. The motivation for doing so would have been to allow the image pixels to be focused on the screen while being shifted. Also, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a photosensitive medium in the device of Shirochi since Cooper teaches this to be known in the art that the illumination display system and the printer can share the same technology and/or configuration providing the former with a screen and the latter with a photosensitive medium.

Shirochi further teaches:

- Each pixel (11) of said digital display (LCD 10) is capable of illuminating only one color (each pixel 11 of the LCD panel being dedicated to either one of the primary colors RGB) (Fig. 6),
- The movement of said transposable lens (31) for both said transposing for a first time and said transposing for a second time are in a direction along one axis (vertical axis) (Fig. 1C),
- The movement of said transposable lens (31) for both said transposing for a first time and said transposing for a second time are in a direction along one axis (vertical axis) and in opposite directions (the lens 31 returning to the original position before being shifted horizontally to increase the number of pixels in the horizontal direction),
- Said first, second, third fixed periods of time are a portion of the image plane's total exposure time (the same image data being repeatedly used to expose the screen of the display system in both vertical and horizontal direction),
- Said digital display is a liquid crystal display (LCD panel 10),
- Said first digital image data set, and said second digital image data set, and said third digital image data set, are all the same digital image data set (each of the pixels RGB being repeated in order to increase the resolution).

Allowable Subject Matter

7. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-3 and 5-10 have been considered but are moot in view of the new grounds of rejection as presented in this Office action.

Pertinent Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hayashi (U.S. 6,304,381) discloses an illumination optical apparatus (Fig. 8) including a digital display system (digital display panel 16), a plurality of lens (lens group 17), an image plane defined by the screen (20), the digital display system, the plural lens and the screen are disposed in that order, where one of the plural lenses includes a transposable lens (image shift lens 18) driven perpendicular to the optical axis in the order of a pixel size so as to shift the pixels for the purpose of enhancing the resolution.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER
May 3, 2005